

# Core-Flex™ by Coretec

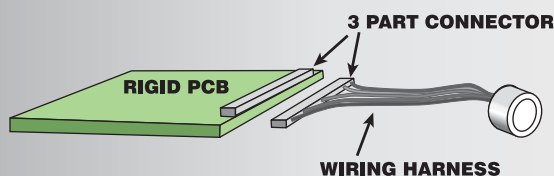
*how far, how fast?®*

**The Rigid-Flex solution evolution is the ultimate solution for military/aerospace and other high-reliability electronic products manufacturers.**



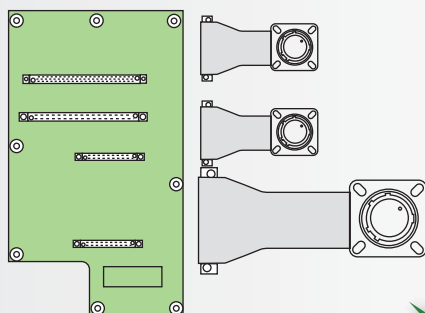
**Go Rigid-Flex and lower your cost!**

## Typical Solution Evolution



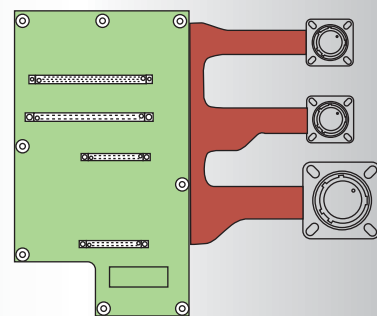
### Conventional Discrete Wiring Assembly

- 3x the solder joints
- least reliable
- 100% more wire
- 100% more headaches



### Flex With Connectors

- 3x the connectors
- 3x the solder joints
- less reliable
- increased assembly costs



### Complete Solution With Rigid-Flex

- minimal interconnects
- fewest solder joints
- most reliable
- lowest total cost

## It solves problems related to:

- ✓ Environments characterized by severe shock & vibration
- ✓ Requirements for easy in-field product servicing and retrofits
- ✓ Demanding impedance requirements

- ✓ Space constraints
- ✓ Irregular form factor requirements
- ✓ Weight minimization
- ✓ Increasing circuit speeds

[www.coretec-inc.com](http://www.coretec-inc.com)

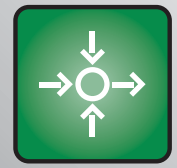
416-208-2100



Time Critical



Technology



Value Added Services

# Rigid-Flex PCB Capabilities

Standard Features	Standard Capabilities	Leading Edge	
Innerlayer Trace/Space .5 oz copper	.005/.005	.003/.004	
Inner layer Trace/Space 1 oz copper	.005/.006	.004/.005	
Plated Layer Trace/Space .5 oz copper + plating	.005/.006	.004/.005	
Plated Layer Trace/Space 1 oz copper + plating	.007/.008	.005/.006	
Pad over Drill Size for tangency (drill + x)	0.016	0.010	**4
Antipad (clearance)over drill size	0.024	0.018	
Minimum mechanical drill size	0.010	0.008	**1
Minimum core thickness	0.003	0.002	Non B/C
Minimum flex thickness	0.002	0.001	
Maximum Copper Weight w/UL approval	3 oz	4 oz	
Maximum Aspect Ratio	8:1	12:1	
	24+	30+	
Maximum Board Thickness due to equipment constraints	0.125	0.180	

Micro-via Features			
Minimum unvia Hole Size	0.006	0.004	**3
Maximum Aspect Ratio	.75:1	.9:1	**3
Capture/Target Pad over drill size	0.008	0.006	**3
	1	2	**3
Glass Reinforced Dielectrics [UV/CO2 Dual Laser]	Y	Y	**3

Materials			
FR-4 (130Tg & 180Tg)	Y	Y	
Nelco 4000-13 (Enhanced Multifunctional Resin)	Y	Y	
Getek/Megtron (PPO)	Y	Y	
Polyimide	Y	Y	
Rigid Flex (Adhesiveless/Achrylic)	Y	Y	
Multilayer Flex	Y	Y	
Rogers 4003 & 4350 (Thermoset/ceramic/woven glass)	Y	Y	
Rogers 3203 (PTFE/Ceramic)	N	Y	
Thermagon	N	Y	
Speedboard C	N	Y	
Constantan	N	Y	
Silver Conductive Epoxy For Shielding	Y	Y	
Taconics RF-35 (Reinforced PTFE)	N	Y	

Surface Finishes			
HASL	Y	Y	
ENIG	Y	Y	**3
Electrolytic Ni/Au	Y	Y	**3
Immersion Sn	Y	Y	**3
Immersion Ag	Y	Y	**3
Selective finishes	Y	Y	**2
Wire Bondable Soft Electrolytic Au	Y	Y	**3
Pb Free HASL	Y	Y	**3
NiPdAu	Y	Y	**3
SnPb Reflow	Y	Y	
Conversion Coating of Al Heat Sinks	Y	Y	
OSP	Y	Y	**3

Other	Standard Capabilities	Leading Edge	
Buried Core vias	Y	Y	
Sequential Lamination	N	Y	
Sculptured Flex	N	N	
DFSM Via Tenting	Y	Y	
Stiffeners (GI, GF, Kapton)	N	Y	
Book Binder Rigid Flex	N	N	**2
Optical Drill	N	Y	**3
Impedance (Single Ended & Differential)	± 10%	± 7%	**2
Chip Cavity	N	Y	
Mixed Dielectrics	Y	Y	
Conductive/Non-conductive Hole fill	Y	Y	**3
Metal Core (Al, Cu)	N	Y	
Heat Sinks	Y	Y	
Assembly (PTH Assembly, Pb and Pb Free solder)	N	Y	
Depth Control Drill/Rout	N	Y	
Etchback (Plasma)	Y	Y	

\*\*1: Minimum drill size is dependent on aspect ratio.  
 \*\*2: Dependent on design.  
 \*\*3: outsource  
 \*\*4: Add .002 for every .001 annular ring required.

## Go Rigid-Flex and lower your cost!

A Rigid-Flex solution reduces material handling, incoming inspection and testing, while improving the reliability of the assembly. No more cables and connectors!

Sample Rigid-Flex Cost Savings	
	Cost In \$
<b>Cable Assembly Design</b>	\$ 40
<b>Component Costs:</b>	
Rigid Boards	20
Cables	5
Connectors	20
Wire Markers	2
Shrink Tubing	2
Cable Ties/ Fasteners	3
<b>Order Costs:</b>	
PO Generation	180
Receiving	15
Incoming Inspection	10
Handling / Storage	5
Freight (all components)	20
<b>Processing Costs:</b>	
Assembly	45
Final Test/Inspection	6
<b>Other Engineering Support Costs</b>	20
<b>Total Rigid Interconnect Cost</b>	<b>\$ 393</b>
<b>Rigid-Flex Interconnect Cost</b>	<b>\$ 135</b>
<b>Cost Savings</b>	<b>\$ 258</b>

\*Based on estimated assembly & component costs.

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